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ABSTRACT

This paper reports on the characteristics of one specific form of collaborative research: that was developed by faculty from research institutions of higher education collaborating with teachers in K-12 schools on the conduct of research on teaching. Eighteen teachers have participated in this research with faculty from Michigan State University under the direction of the Institute for Research on Teaching (IRT). Typically, teachers teach in the morning and are with IRT in the afternoon. Research time is paid for by the IRT to the school district, including benefits. The contributions teachers make to a research program change and improve as they become familiar with research agendas and requirements. Teachers have defined research programs in the areas of: (1) classroom strategies; (2) integrating the teaching of language arts into the teaching of other subjects; (3) the design of empirical investigations; (4) the staying power of changes in teaching practice; and (5) replication of work across many school settings. A description is given of how the teachers and faculty members work together and their perceptions of the benefits of the work. The costs of collaborative research, both institutional and personal, are also discussed. Brief descriptions are given of alternative forms of collaborative arrangements to illustrate the concept's breadth and potential power. (JD)

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COLLABORATING WITH TEACHERS ON RESEARCH: PIONEERING EFFORTS AT THE INSTITUTE FOR RESEARCH ON TEACHING

Andrew C. Porter

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Andrew C. Porter

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Institute for Research on Teaching

The **Institute for Research on Teaching** was founded at Michigan State University (MSU) in 1976 by the National Institute of Education. Following a nationwide competition in 1981, the NIE awarded a second five-year contract to MSU. Funding is also received from other agencies and foundations for individual research projects.

The IRT conducts major research projects aimed at improving classroom teaching, including studies of classroom management strategies, student socialization, the diagnosis and remediation of reading difficulties, and teacher education. IRT researchers are also examining the teaching of specific school subjects such as reading, writing, general mathematics, and science and are seeking to understand how factors outside the classroom affect teacher decision making.

Researchers from such diverse disciplines as educational psychology, anthropology, sociology, and philosophy cooperate in conducting IRT research. They join forces with public school teachers who work at the IRT as half-time collaborators in research, helping to design and plan studies, collect data, analyze and interpret results, and disseminate findings.

The IRT publishes research reports, occasional papers, conference proceedings, a newsletter for practitioners, and lists and catalogs of IRT publications. For more information, to receive a list or catalog, and/or to be placed on the IRT mailing list to receive the newsletter, please write to the IRT Editor, Institute for Research on Teaching, 252 Erickson Hall, Michigan State University, East Lansing, Michigan 48824-1034.

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Abstract

Ten years of IRT experience provides important insights into the benefits and costs of faculty and teachers collaborating on research. Collaboration is much too valuable to be rejected as a fad but not without difficulties either

Teacher collaboration was initiated at the IRT to ensure an applied research agenda with high promise for benefiting practice. Nevertheless, both participating teachers and participating faculty see themselves as the primary beneficiaries. Faculty ask better research questions, use more externally valid research methods, and interpret their findings more fully than when they do not collaborate with teachers. Teachers better understand and appreciate the strengths and limitations of their own practice, are more receptive to new ideas, and are more analytic in applications of those new ideas than when they do not collaborate with faculty on research. The costs of teacher collaboration are less evenly distributed. For example, the institution of higher education has paid the full costs of research time for faculty and for teachers.

At the IRT, teacher collaboration has taken different forms to serve a variety of purposes. Teachers have been productive collaborators in quantitative as well as qualitative research. Neither has the utility of teacher collaboration been limited by the disciplinary perspective of the research undertaken.

While IRT experience illustrates the breadth of what is possible through teacher collaboration and that benefits outweigh costs, the experience also interjects a note of caution. There are limits to what experts know about their practice; practitioner wisdom cannot be taken as unexamined truth. A vigorous program of empirical research is a necessary complement.

COLLABORATING WITH TEACHERS ON RESEARCH: PIONEERING EFFORTS AT THE INSTITUTE FOR RESEARCH ON TEACHING[1]

Andrew C. Porter[2]

As the nation turns its attention to the challenges of improving education at all levels, there has been a surge of interest in collaborative efforts: between higher education and business, between K-12 schools and business, and between higher education and K-12 schools. At a general level, these calls for new forms of collaboration make sense (Appley & Winder, 1977) and several of the fledgling efforts show early promise (e.g., Lieberman, 1986a; Maeroff & Boyer, 1983; Maloy, 1985). Yet at an operational level, many questions remain. What specifically is to be gained through forming new partnerships to attack old problems? What are the barriers that have prevented these collaborations from becoming prevalent in the past and how can these barriers be broken? What are the costs of collaboration? Do the benefits really outweigh the costs? Surprisingly little is known about the answers to these and other questions, even at an anecdotal level. The research basis for informing collaborative efforts is virtually nonexistent (Fox & Faver, 1984; Houston, 1979; Hord, 1986).

This paper considers the characteristics of one specific form of collaborative endeavor: faculty from institutions of higher education collaborating with teachers in K-12 schools on the conduct of research on teaching. The Institute for Research on Teaching (IRT) at Michigan State University is one of the pioneers in this form of collaboration, beginning its work in 1976 well

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[1]This paper was based on a speech entitled "Research on Teaching and Teacher Education: Collaborative Efforts Between Schools and Colleges" presented to the Virginia Educational Research Association, May 1, 1986.

[2]Andrew C. Porter is coordinator of the Content Determinants Project, co-director of the Institute for Research on Teaching, and a professor in the Department of Counseling, Educational Psychology, and Special Education at Michigan State University.

before the current reform efforts and at a time when collaborative efforts in education received relatively little attention (see also Lieberman, 1986b).[3]

When IRT began its collaborative efforts, skeptics far outnumbered enthusiasts. Now, 10 years later, the reverse is true. A careful look at IRT's history of collaborative efforts reveals that both skepticism and enthusiasm are appropriate. Teacher/professor collaboration in the conduct of research on teaching has been instrumental in providing new insights into teaching and new substantive directions for research on teaching. But collaboration has not been without its costs. For some individuals and some projects, collaboration has not worked well at all. IRT experience shows collaboration is both too valuable to be rejected as a fad and too difficult to be embraced without examination.

Writing on the topic of teacher collaboration involves risks. Whatever insights into the costs and benefits of collaboration can be gleaned from IRT experience, they remain products of experience, not products of systematic inquiry. Teacher collaboration is something we do at the IRT, not something we have studied. Further, collaboration has become increasingly popular in recent years (even to the point of becoming one of the criteria used by the U.S. Secretary of Education to judge the merits of research, development, and demonstration proposals). Many teachers and researchers now have direct experience with collaboration. Nevertheless, although the topic is teacher collaboration, the point of collaboration is to establish better relationships between practice and research. We may be experts in collaboration, but we remain

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[3]Coincidentally, that same year marked the beginnings of another pioneering effort in collaboration. Through the Metropolitan School Study Council, faculty of Teachers College, Columbia University have been working with school districts from New York, New Jersey, and Connecticut on school improvement efforts (Lieberman, 1986a).

novices in our understandings of the ways in which educational research and educational practice are most productively bound together.

The IRT: A Unique Setting for Teacher Collaboration

Because collaboration can serve many goals and take many forms, understanding teacher collaboration at the IRT must begin with understanding the IRT itself. The IRT at Michigan State University began its work nine years ago under a contract from the National Institute of Education. Through its focus on teachers' responses to problems of practice, the IRT strives to produce knowledge and understanding of direct benefit to the profession of teaching and to teacher education. Prior to the IRT, only limited research on teaching was available and most focused on the relationship between teacher behaviors and student outcomes. This research agenda was ambivalent in distinguishing between the teacher as technician and the teacher as clinical professional.

In contrast, IRT research casts teachers as clinicians exercising professional judgment, thus directing research on teaching to a more balanced focus on both the relationship between teacher behaviors and student outcomes and on the relationship between teachers' thoughts and their subsequent actions. A second and equally important distinguishing characteristic of IRT work has been its focus on enduring problems of practice, problems that cannot be solved easily and are experienced as important by many, if not all teachers in the United States (e.g., the pressure to teach more content to higher standards of achievement, the complications that accompany a commitment to educate all of the nation's children, including those with special needs).

In retrospect, it would have been odd not to involve teachers as full partners in IRT's efforts to understand teacher thinking. During its fragile beginnings, however, the idea of teachers as researchers of practice was foreign, novel, and required strong leadership to implement (leadership was

amply supplied by Judith Lanier, then co-director of the IRT and now dean of the College of Education at Michigan State University). Working together at the IRT, university professors and school teachers have produced new understandings of the strengths and limitations of rational models for describing teachers' decisions and links to teachers' practices. The research has clarified the extent and nature of differences among teachers in the goals they hold for schooling, the responsibilities they are willing to accept for themselves, the achievements they believe possible for their students, their interpretations of the policy and practice environment, their perceptions of and attention to cultural and individual differences, and their knowledge of subject matter and pedagogy. By concentrating on understanding teachers and why they do what they do, a deeper understanding of the complexities of teaching and of the dilemmas that teachers must manage has emerged. The program of research that evolved and the findings that resulted could not have been accomplished without teachers bringing to the enterprise their deep and expansive knowledge of practice, or without professors bringing their disciplinary perspectives and understandings of research methodologies.

What is Teacher Collaboration at the IRT?

Teacher collaboration does not have a single form. Within the IRT there have evolved new interpretations and forms of the concept in response to particular needs of research and particular strengths of individuals. At the heart of all IRT collaborative efforts, however, is the concept of parity; neither professor nor teacher is relegated to the role of consultant. One of the first IRT teacher collaborators warned,

> As collaborators in research efforts, teachers provide the insight, wisdom, judgment, and experience possible only from one who interacts daily with children and learning. . . . My experiences as a collaborator this past year convince me that teachers too easily become consultants to, rather than full participants in the research process. Too easily the researcher becomes the sole originator of the research,

> while the practitioner becomes simply the object of study rather than an investigator as well. If practitioners are to be full partners in the research effort (as we agree they should be), they must be co-investigators who share with researchers responsibility for the design and execution of the research, as well as dissemination of the results.
>
> I have realized after a year of collaboration that there are limits, both actual and imposed, to what teachers can and are asked to contribute as collaborators. Researchers, because they lack experience in working with teachers and in classrooms, sometimes fail in their intentions to include teachers as co-investigators. Likewise, lack of interest, time, training, and sufficient rewards limit teachers' potential participation. These limitations can be overcome with the cooperation of both research institutions--such as the IRT--and the schools where teachers are employed. (Gajewski, 1978)

The first and dominant form of teacher collaboration in the IRT has teachers teaching half time in their schools, released the other half time to pursue IRT research. Typically they teach in the morning and are with the IRT in the afternoon (and often during the evenings and on weekends). Research time is paid for by the IRT to the school district, including benefits.

Eighteen teachers have participated in this form of IRT research collaboration. Usually 4 teacher collaborators have half-time residence (with approximately 30 faculty members, definitely making teacher collaborators the minority).

Typically teacher collaborators have worked with the IRT for a three-year period, although a few have stayed longer and some have had briefer assignments. The contributions that teachers make to a research program change and improve as they become familiar with the research agenda and the requirements for conducting research. One year of collaboration would not be enough. Periods longer than three years can be productive but the tensions of two half-time assignments become increasingly problematic to the individual. Problems can also arise for the school district.

The relatively modest number of teacher collaborators at the IRT reflects the high costs of collaboration. The university has paid all of the financial

costs which are, per individual, equivalent to the costs of research faculty. Since faculty are engaged in research as a normal part of their duties, their research time can be cost-shared by the university to some extent. This is not the case for teachers.

The process of selecting individuals to serve as teacher collaborators is parallel to that of hiring any other research personnel. Positions are posted and advertised in local area schools. Applicants submit a standard resume and a written statement concerning why they are interested in collaborating on research on teaching. IRT teacher collaborators and faculty serve on the search and screening committee. They conduct interviews with the most promising applicants and make recommendations to the IRT co-directors. The competition is stiff and the individuals selected are exceptional. Applicants are required to be tenured and to have a masters' degree. The selection process seeks to identify individuals who are good teachers, who are thoughtful and articulate, and who seem adaptable to change.

When teachers join the IRT, they become members of a research project, just as do faculty. Similarly, teacher collaborators are evaluated each year by project directors and institute co-directors, just as are faculty. Also like faculty, some have been more productive than others.

Collaborating on research at the IRT is a sharp contrast to teaching school. In the words of one teacher collaborator:

> One of the most difficult challenges was adjusting my work style to that required at a research institute.
>
> When I joined the IRT, it was almost like entering a foreign culture. The contexts in which teachers and researchers work are dramatically different, and I was struck most by the difference in the tempo of daily life between the university and my school. . . . The nature of the job encourages teachers to work at breakneck speed. We must confront, often simultaneously, a variety of concerns--those of students, administrators and parents--that require our immediate attention. . . .
>
> I retained this sense of immediacy when I began working at the IRT. On my first day, I walked quickly into the building and jogged

> up the stairs at my usual "teacher's clip." I raced toward the set of office cubicles that included mine and sat at my desk, poised for action, ready to respond to the needs of seven or eight people while simultaneously organizing my thoughts for whatever work I was to do. . . .
>
> This work cannot be accomplished within the kind of lockstep schedule so essential at my school. At the IRT, I must adapt my schedule to my work instead of my work to my schedule. I find I need large blocks of uninterrupted time in which to think, discuss and write about teaching if I am to do these things well. (Arndt, 1984)

What Do Teacher Collaborators Do?

At the IRT, teachers collaborate in all phases of the research process. The IRT is committed to investigating enduring problems of practice. Research generated from one or another disciplinary perspective may be important from a theoretical point of view and recognized as such by faculty, but it may miss the mark in important ways if the improvement of practice is the goal. Teachers have made especially important contributions in helping to define research problems for investigation. For example, teacher collaborators were concerned that a relatively small number of students in any classroom require a disproportionately large share of a teacher's time. Some teachers, however, develop reputations for being unusually effective with these "problem children." These concerns led to IRT's Classroom Strategy Research Project. Another example is IRT's Socialization Outcomes Project which was originally stimulated by teacher collaborators' concerns for the nonacademic goals of schooling, what they are, how they are promoted, and how they can be assessed. And yet another example, the Language Arts Project, began with teacher collaborators' concerns for ways to make more efficient use of limited classroom time by integrating the teaching of language arts into the teaching of other subjects.

IRT teacher collaborators also participate in the design of empirical investigations. For example, their intimate knowledge of practice has helped

to inform time sampling for classroom observation studies and the identification of contrasts among students which are important to investigating the effects of teaching strategies. Teacher collaborators have made strong and convincing calls for longitudinal research to assess the staying power of efforts to change teaching practices and replication of work across a variety of school settings.

Having teachers as members of research teams has led to important advances in the quality of data collected. For example, the construction of questionnaires and interview schedules has improved immensely because teachers constantly remind researchers that the jargon of educational research is different from the jargon of practice. Similarly, teacher collaborators have helped assess the burdens that research may place on teachers and students.

Equally important has been the role that teacher collaborators play in analyzing and interpreting the results of IRT work. Teacher collaborators regularly co-author publications that result from IRT work and have been especially active in presenting results to professional audiences in workshops and at state, regional, and national meetings. They are especially sensitive to the needs for research accessibility to practitioners and policymakers. By virtue of their roles as both teachers and researchers, they add authority to research presentations. One teacher collaborator averaged 10 major presentations of IRT work per year over a four-year period of collaboration.

Just as teacher collaborators have not been relegated to any one particular role, neither have they been limited by the disciplinary perspective of the research in which they become involved. IRT teacher collaborators have joined research teams which draw heavily upon ethnographic methods, but they have been equally effective in their participation in work coming from a psychological perspective and in work employing quantitative research methodologies. In some

ways the contributions that collaborating teachers make to IRT quantitative research have been greater than those contributions to ethnographically oriented work, because the latter typically involves teachers as research informants or uses the method of participant observation whereas the former does not.

What Happens to Former Teacher Collaborators?

Of the 14 teacher collaborators who have left the IRT, 7 have continued teaching. As one put it,

> Research participation offered . . . a unique professional development opportunity. Teaching is a straight line career. . . . If you want to "advance," your only option is to go into administration. Getting involved in research offered [me] an alternative to that. Teaching was getting flat for me and now it's fun and exciting again. I don't have to be an administrator to be challenged. . . . Since being a teacher collaborator, [I have] kept involved with research by serving as a subject for IRT studies. I would want researchers in my classroom all the time. . . . The researchers share their questions with me, and we've had some wonderful arguments (Jean Medick, cited in Eaton, 1982).

Of the other 7, 2 have completed doctoral degrees and 5 are in doctoral programs. One is a Michigan Education Association leader at the state level and 2 are now faculty members at institutions of higher education.

Assessing the Benefits of Teacher Collaboration

In assessing the benefits of teacher collaboration at the IRT, the most surprising finding is also the most important. Teachers see themselves as the major beneficiaries of collaboration and worry about the benefits to faculty. However, university faculty see the major benefits as coming to them and worry about the benefits to teachers. Teacher collaboration was initiated to strengthen the research agenda, particularly to strengthen the relevance of research to practice, but direct benefits to practice result as well.

Benefits to Research

The effects of teacher collaboration depend largely upon the strengths and interests of the collaborating teachers. Not every teacher collaborator averages 10 research presentations a year. Nor has each teacher collaborator become a principal investigator on a project as one did. But all IRT teacher collaborators have made important contributions to the research program and left their unique stamps on the institute. Bright, energetic people, whether teachers or professors, set for themselves important problems on which to work, they pursue those problems in rigorous and innovative ways, interpret the data in light of other things that they know, and then present the results in ways which inform.

However, some communalities exist in the benefits of collaborating with teachers in research on teaching. Coming from the world of practice, in fact keeping one foot in the world of practice while collaborating on research at the IRT, teacher collaborators keep the focus of the enterprise on important problems of practice. Sometimes university faculty digress about the theoretically elegant. Although this is not necessarily bad from a disciplinary perspective, it should be the exception rather than the rule for educational research.

Having teachers on the research team adds authority to research on teaching. Both the research and the ways in which the research is presented gain authority through teacher collaboration. As Buchmann (1985) has argued, writing to inform teachers might more profitably be conversational than argumentative in form. Anticipating questions that teachers will raise then addressing them in writing are important steps toward achieving a conversational mode.

Some of the clearest and most powerful examples of unique benefits can be found in the interpretation of research results. One IRT study focusing on

teachers' content decisions in elementary school mathematics found that 40-50% of the topics taught over the course of a full school year received 10 minutes or less of instruction each. In contrast, only 20-30% of the topics taught received 30 or more minutes of instruction (i.e., the equivalent of one lesson's worth of instruction or more). Some of the researchers on the project were quick to conclude that such instructional practices are bad. A conversation with teacher collaborators did not resolve the issue about what constitutes good and bad practice, but did make clear that covering many topics for relatively short amounts of time is something that teachers do intentionally; they refer to the method as "teaching for exposure." The practice is most prevalent at the beginning of the school year when topics are reviewed and at the end of the school year when topics are introduced for subsequent years. Although disagreements remain within the research team as to the appropriateness of this method, having teachers involved in the interpretation of the results has avoided an overly narrow and in some ways erroneous interpretation.

Yet another example can be drawn from teacher collaborator reactions to a compilation of major findings from the first 10 years of IRT work. Each project was to identify a small number of major findings and conclusions based on its work; these were collected in a single document and reviewed by institute staff. Teacher collaborators felt that the findings focused more on problems and difficulties of teaching and inadequacies of teachers than on solutions to problems and directions for improvement. From this insight, the IRT has become more explicit in its concern to go beyond describing what <u>is</u> to constructing programs of what might <u>be</u>.

<u>Benefits to Practice</u>

IRT teacher collaborators cite a wide variety of benefits that they have received as a part of their research collaboration (e.g., see Thomas, 1985).

As one teacher collaborator put it, "Teaching is an intellectual desert with not enough challenges in it to last a lifetime" (Linda Alford, cited by Eaton, 1983). Through research collaboration, teachers have discovered new insights to their teaching, new understandings of what research can help teachers accomplish, and new desires to serve their district, primarily in staff development activities.

"Collaboration breaks down the isolation. What impressed me most about the experience was that other adults asked me questions about teaching and actually listened to what I said" (Maxwell, 1981). "Collaboration has been one of the most significant personal growth experiences I've ever had" (Charlette Kennedy, cited in Shalaway, 1978). Another said she was a better teacher from the experiences she had in research collaboration at the IRT. At the heart of these comments is the belief that collaborating on IRT research provides the distance and time necessary to become analytic about one's practices.

> Being able to step back and carefully study teaching as a researcher has helped me tremendously. I now look at my own teaching through new eyes.
>
> First, I value teaching more now than I did before the study. Looking at someone else made it possible for me to see how complicated a task teaching is. No wonder teachers become frustrated and tired.
>
> Another thing I discovered is that teachers are apt to be too critical of themselves. Part of my frustration as a teacher is that I cannot solve everyone's problems. Yet when Mary expressed similar frustration I was amazed. I quickly pointed out all she had done and told her she should be complimenting, not criticizing herself. (Maxwell, 1981)

A second theme that emerged as teachers described the benefits for collaboration concerned their responses to advice on their practice--advice transmitted through instructional materials, research literature, and more generally as a part of the norms, expectations, and fads of a profession. Teacher collaborators report being more receptive to new ideas as well as being more analytic when assessing the value of those ideas:

> Some of my fellow teachers say research is not helpful to them, and I used to agree. They want research to be prescriptive, to tell them exactly what to do to help their students learn. I wanted that too, but research doesn't work like that. . . .
>
> Research lets us see how others teach. Teachers learn best from other teachers, some say, but the opportunities for observing others teach is infrequent. Through the eyes of the researcher, we can watch other teachers in their classrooms. We can see the effects of their behavior, test our decisions against theirs, match our strategies against theirs, and gain insights into ourselves and our teaching. (Alford, 1983)

Increased professional confidence and a strengthened commitment to the improvement of practice generally is a third theme that underlies teacher descriptions of the benefits of collaboration.

> My work in the Teachers' Conceptual Change in Practice Project has caused me to wonder how school districts might better utilize returning teacher collaborators who have valuable experience in writing, analysis, presenting, organizing groups, intervention, and observation. Districts could use us to work with new teachers, organize inservices, or examine a particular curriculum. Not taking advantage of this resource seems a waste.
>
> Although I am asking districts to explore ways to use the expertise of former teacher collaborators in linking research and practice, this cannot be done without cost. Time should be allotted for continued professional growth that might strengthen the district. A returning classroom teacher cannot be asked to assume extra responsibilities in addition to his/her classroom duties, without adequate time to do the job properly. (Brown, 1985)

These benefits to teachers, although separate and distinct, complement the benefits to faculty. The commitments, expectations and reward structures are different for teachers than for university faculty. Teachers' colleagues and administrators have no mechanism to recognize and reward research productivity. They are in the business of providing education to young people. In contrast, scholarly productivity is a first order concern for university faculty. Staff development and other direct benefits to education are the long-term goals but research is the short-term expectation. The great strength of teacher collaboration at the IRT is that both of these ends are served at the same time.

The Costs of Teacher Collaboration

Like anything worthwhile, teacher collaboration involves costs, both institutional and personal. Some of the costs are relatively easy to bear and some are not.

Costs to Faculty and the University

The IRT would have more teachers collaborating in its research if it could afford the financial costs. A half-time teacher appointment in the IRT costs approximately $20,000 per year. All of these costs have been borne by the university (offset by a federal grant). In one sense, the cost for a half-time teacher collaborator is not much more than the cost for a half-time faculty member. But faculty time is a regular part of a university budget, a resource that has been paid for and for which a large fraction is to be committed to research and scholarship. Teachers' salaries represent an additional cost since 100% of a teacher's assignment in their school district is for instruction. Based on the benefits that collaborating teachers have received, indications suggest that districts might be willing to underwrite at least some of the costs of their teachers collaborating on research. Such an arrangement might be appropriate but until such time, the financial costs of teacher collaboration to universities is great.

Teacher collaboration also has its costs for faculty time and effort. Researchers and teachers do not at first know how to work together. They have different languages, different skills, and, perhaps most important, different agendas. Collaboration is a two-edged sword. Research proceeds more slowly when teachers collaborate with faculty, but at the same time research proceeds in directions more attuned to practice and in ways that yield greater external validity than otherwise might be the case. Generally, teachers ask more difficult questions than researchers. They are not satisfied with results from

studies based on simulations and studies that stop with short-term results (failing to consider the long-term effects of an intervention). Simply put, good research takes time and effort, especially good applied research, and teachers collaborators can help us hold to the more difficult path.

Yet another potential cost to teacher collaboration arises, a much more subtle cost. There are "limits" to what experts know. Just as teachers can be insightful informants as to the complexities of professional practice, they can also be incorrect in their interpretations or blind to the underlying explanations for whatever expertise they may possess. Insights into practice provided by teachers, like insights into practice provided by university faculty, must be critically examined and used only to the extent they have utility. A danger exists that, in the current enthusiasm for university/school collaborations, practitioner wisdom will become unexamined truth. At the IRT, this potential cost is largely held in check by a vigorous empirical research agenda.

Costs to Teachers

Just as teacher collaboration was seen to have benefits for both faculty and teachers, teacher collaboration also has costs for both groups. Anyone who has labored under a joint appointment knows that two half-time appointments can easily become two full-time jobs. Further, the accomplishments achieved in one setting are generally not understood nor recognized by those who oversee the person's work in the other setting. This would not be a problem if assessments of productivity were always carefully made within the context of a particular assignment. All too often, however, the output from a half-time assignment is compared directly to outputs from others with full-time assignments.

Another cost to collaborating teachers concerns their relationships with teaching colleagues. These relationships are critical since, "We're temporary

at IRT. Our school is our home" (Lawrence, personal communication, 1986). At least some teacher collaborators have experienced a distancing from their colleagues at school, not only as a result of their decreased availability, but also because of the special nature of their work.

> "Beth, are they smarter than we are?" She patted me on the arm and with both laughter and curiosity added, "Do you like them better?". . .
>
> To answer my friend's questions, I had to "unpack a whole bag of misconceptions" (as they say in the IRT). "They're different," I answered to her first question while [I thought about what was happening to me at the IRT].
>
> I know now that intelligence is not what differentiates teachers and researchers. The language barrier too is just an artificial wall that can be climbed. The researcher's perspective in looking at the pieces rather than the whole of what happens when children learn is both enlightening and limited. . . . Researchers can look past the emotions involved in teaching and learning; and they are committed to articulating what they see in a barrage of words on reams of paper that awe even an English teacher.
>
> Do I like them better? I don't know about better but I do know that I like the way they probe; I have been energized by the way they always ask, "Why?"; and I respect their position that no one has either all the answers or all the questions about teachers, about children, and about schools. (Lawrence, 1986)

The potentially greatest cost to teachers concerns the ability of a school and district to continue to serve as a professionally stimulating environment, one that offers professional growth opportunities to returning teachers with new understandings of their practice, new aspirations for themselves and new goals for their profession.

> Inside my classroom it was as if the IRT had never existed. I had changed so much that my job no longer fit me. I had acquired new knowledge and skills that I wanted to apply to my classroom and school district, yet there was no accepted, institutionally sanctioned way for me to do that. I tried to make my own way. . . . But a funny thing happened as the years passed and my vita expanded: My continuing efforts to integrate research and teaching remained in the category of personal idiosyncrasy.
>
> On the one hand, my school district has not stood in the way of what it considers to be my personal, professional-development pursuits; neither has it seen fit to investigate with me the promise, implicit in my work, of synthesizing practice and research in the interest of improved student achievement. District administrators have left reports of my work unacknowledged and unused.

On the other hand, the IRT has regularly encouraged my efforts, but because I am not a faculty member my efforts are always, by definition, those of an outsider. I have taken on all the responsibilities of a faculty researcher but remain barred from participating in the reward structure of academic life. The only way to participate in that structure would be to leave classroom teaching behind.

Ralph Waldo Emerson remarked, "The years teach much which the days never know." My days with the IRT have been privileged ones, allowing me to see how research and teaching can nourish one another. My years here, however, have shown me that in spite of my best efforts and personal successes in combining research and classroom teaching, they remain separate territories with well-defined boundaries. I have not been able to bring them together for anyone other than myself. That's a shame. (Weinshank, 1985)

Teacher Collaboration: Some Other Arrangements

In addition to the type of teacher collaboration already described, the IRT has experimented with a variety of other arrangements and will continue to do so. Each of these arrangements has been promoted by a particular goal and each undoubtedly has its own unique list of benefits and costs. In the descriptions of alternative forms of collaborative arrangements, no detailed analysis will be provided. Rather, these descriptions illustrate the breadth and potential power of the concept.

Written Literacy Forum

Combining methods from cognitive psychology and the ethnography of communication, researchers at the IRT have been engaged in studies of the teaching and learning of writing (Clark & Florio, 1983). A parallel goal of the work has been to modify the traditional cultures of research which include teachers serving as subjects, researchers serving as data analysts, and teacher educators serving as change agents. Work on this project began with studies of the teaching and learning of writing in elementary and middle school classrooms. The teachers involved as subjects in the research became the

researchers themselves in the Written Literacy Forum. Together, university faculty and teachers engaged themselves in analyses of practice (both their own practice and that of others) in an attempt to identify findings of immediate practical value. Surprisingly, participating teachers differed from IRT researchers in what they believed were the most important findings. These differences formed the basis of extended dialogue between researchers and teachers. As a result of this unique form of collaboration, new understandings of the teaching and learning of writing emerged and new studies of writing were designed and initiated.

Teachers' Conceptual Change in Practice

This IRT project was designed to address the lack of teacher input in decision making about educational reform at the local level (Erickson, 1986; Campbell, Raphael & Zietlow, 1986). Work is currently proceeding with several teachers and the principal in an elementary school. The research component will document processes by which teachers learn to reflect on change and write about their conceptions of teaching and the ways in which their views influence or could influence district audiences. The project is also a new form of staff development because there are no predetermined changes on which work is focused. Through released time for teachers to reflect and analyze their work and through support from faculty to analyze their practice, the goal is to give teachers greater control over their own circumstances. This unique form of collaboration was explicitly designed to foster both types of benefits common to IRT teacher collaboration.

Defining Enduring Problems of Practice

A recent initiative of the IRT has been to involve teachers in reconsidering IRT's focus on enduring problems of practice. Selected from among 80 individuals nominated by IRT staff as "good teachers," 9 teachers joined 4 IRT

teacher collaborators, 2 IRT researchers, and a teacher educator to identify answers to the following questions: (a) what do I need to know more about in order to become a more effective teacher and (b) what are the situational factors that affect my ability to be more effective? The group is composed of male and female teachers from a variety of ethnic backgrounds, from elementary and secondary schools in urban, suburban, and rural areas. Nevertheless, the group's deliberations represent an analytic process rather than a representative survey of teachers' beliefs.

Thus far, the group has worked together for one week in the summer, during a two-day retreat in the fall, and during another one-day retreat in the winter. In between and prior to these sessions, members of the group engaged in a variety of writing activities. The task is not an easy one and the group has struggled at times. The work often has resulted in "answers" rather than hypotheses, in providing solutions rather than defining problems. Deliberations have revealed assumptions teachers make, especially strongly held but largely unexamined assumptions about connections between teacher practices and student achievement.

After nearly a decade of IRT research about enduring problems of practice, involving new teachers in deliberations about what is important for teachers to understand continues to be exciting. Because of IRT's commitment to research that has bearing on practice and because IRT's staff includes teacher collaborators, this special form of teacher collaboration has been both possible and productive.

Conversations About Teaching

As the IRT has grown in stature and visibility, an increasing number of teachers have approached the institute with a desire to become involved. For two years, several teachers from the surrounding area have been meeting

informally once a month in late afternoon with IRT teacher collaborators and faculty, teacher educators and doctoral students. The purpose has been to think about teaching--what it is like as a career and as a form of work which can be informed by research.

Starting with the IRT's Teacher Explanation project, the group members considered implementation strategies to incorporate recommendations into their own practice. Discussions included topics such as the appropriateness of adapting recommendations to fit unique circumstances of each teacher's classroom. The group has also considered ways in which teachers can maintain their enthusiasm after years of teaching. One of the outgrowths of this set of deliberations was to plan an experiment to carry out in the teachers' classrooms.

This particular form of teacher collaboration places teachers in the majority and research faculty in the minority. It also shifts the goal from a focus on research to a focus on the implications of research for practice. The ultimate benefits, however, go to practice and to research in the form of new issues to be pursued.

Dilemma Management

Magdalene Lampert, IRT faculty researcher, has taken a unique approach to her research on teaching and dilemma management. She has accepted full responsibility for teaching mathematics in a fourth-grade classroom in a nearby school while serving as a professor at the university at the same time. As she put it,

> Being both a teacher and a researcher on teaching provides opportunities for scholarly deliberation which must meet two different sets of criteria for legitimate knowledge: those which obtain in the world of practice as well as those determined by academic research. It therefore serves to maintain the complexity of practice while subjecting practice to careful analysis. (Lampert, in press)

By being a teacher and a researcher, Lampert's work must necessarily go beyond describing teaching as it appears to others to describe teaching as it is planned, executed, and revised by practitioners, with an eye toward increased effectiveness. Her work has revealed new insights into the ways teachers manage what often appear to be forced choices between competing goals (e.g., the social and emotional needs of the children and the demands of subject matter, the quality of education, and excellence in education).

The IRT will continue to experiment with new forms of collaboration. One possibility under consideration is the establishment of professional development schools that would jointly serve the purposes of school improvement, better training of professionals, and research on both. Another possibility is to collaborate with a teachers' professional organization to develop new forms of inservice training for teachers and to experiment with ways the expertise that teacher collaborators have developed can be used to support school-based staff development. But the point is made: Teacher collaboration can productively take many different forms in serving many particular ends.

Summary/Conclusions

The Institute for Research on Teaching at Michigan State University is among the pioneers of teachers collaboration with faculty in research on teaching. Faculty and teacher collaboration was motivated by the nature of the research: research on teacher thinking demands teacher participation. But as the concept has matured and as experience has developed, the benefits and implications of these arrangements have become increasingly clear. The goal is now to forge better connections between research and practice.

The concept of teacher collaboration is broad, taking different forms to serve a variety of purposes. For the IRT the arrangements have been with individuals rather than with institutions, and all of the arrangements have

focused on research. But even within these parameters, a variety of arrangements has been successful. Experience has shown that teacher collaboration on research is not limited by research method or disciplinary perspective. Teachers have been productive collaborators in quantitative and qualitative research, in research taking a psychological perspective as well as research taking an anthropological perspective.

When IRT began its teacher collaboration, it met with greater skepticism than enthusiasm. Now, the reverse is true. But the costs and benefits remain largely unexamined. IRT experience supports the surge in popularity of collaborative arrangements but indicates a note of caution. There are limits to what experts know about their practice. Teaching often does not allow the benefit of time for reflection. Teachers can and do make important contributions to research on teaching, but just like faculty, their thinking is not infallible and should not be placed above critical examination. And just like faculty, some teachers are better at collaborating in research than others. Careful selection and evaluation are required.

The most surprising conclusion from IRT experience with teacher collaboration is that the benefits are quite evenly distributed between participating teachers and participating faculty. Each group sees itself as the primary beneficiary and tries to improve benefits to the other. Faculty ask better research questions, use more externally valid research methods and interpret their findings more fully than when they do not collaborate with teachers. Teachers more fully understand and appreciate the strengths and limitations of their own practice and they become more receptive to new ideas and more analytic about applications of those ideas than when they do not collaborate with faculty on research. The costs of teacher collaboration have been less evenly distributed. The institution of higher education has paid for the time that teachers spend conducting research.

The conditions of teaching and the teaching profession need reform (Carnegie Forum, 1986; The Holmes Group, 1986). Creating a stronger and more active teaching profession and a more professional environment for teachers could result in new forms of support from school districts for teachers to participate in professional development activities, to reflect on their own practice, and to participate in the generation of a knowledge base on teaching.

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